

REMARKS

Section 103 Rejections (Chan ivo Iwasaki)

All claims were rejected as being unpatentable over Chan in view of Iwasaki or being unpatentable over Chan in view of Iwasaki and others. Applicants request reconsideration.

All of the independent claims remaining in the application have been amended to even more clearly distinguish the present invention from anything disclosed or suggested by Chan, Iwasaki or any of the other cited references.

Chan describes techniques for making measurements using surface enhanced Raman spectroscopy. Chan's technique requires a metal coating of his porous silicon to produce his "surface enhanced Raman spectroscopy" (SERS). He says in his abstract that "The metal coated substrate ... provides an extensive, metal rich environment for SERS, SERRS, hyper-Raman and/or CARS Raman spectroscopy." Applicants' sensor contains no metal coating on their porous silicon. Applicants' sensor as claimed operates on an entirely different principal.

The present invention as currently amended provides a sensor with an interference monitor for monitoring interference of light reflecting from two parallel surfaces in the porous silicon. Specifically all claims are limited by:

- a "porous silicon region defining a top surface and a bottom surface",**
- an "interference monitor adapted to monitor interference patterns caused by interference of light reflected from said top surface with light reflected from said bottom surface", and**
- "a computer processor programmed with a computer program for making molecular binding measurements based on changes in the interference patterns monitored by the at least one interference monitor while analytes bind with and disassociate from ligands attached to surfaces of said pores."**

There is nothing in Chan to suggest a sensor for making measurements based on changes in interference patterns.

Iwasaki describes techniques for preparing a nano-structure having pores of more than one size diameter. There is nothing in Iwasaki to suggest a sensor for making measurements based on changes in interference patterns.

Applicants' sensor technology as claimed is based on changing interference patterns produced by changes in the optical path differences between light reflected off the top of the porous silicon layer and light reflected off the bottom layer. This technology is totally different from Raman spectroscopy technology. Applicants in their 2 March, 2007 response attached a description of Raman spectroscopy downloaded from Wikipedia, the free WEB encyclopedia.

In his latest rejection Examiner stated that "a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to distinguish the claimed invention from the prior art". In response, Applicants submit that they believe their claims as originally presented did require structural differences between their sensor and the devices described by the prior art; however, the above referred to amendments now make these structural differences completely clear. The claims as amended require:

a "spectral monitor adapted to monitor interference patterns caused by interference of light reflected from said top surface with light reflected from said bottom surface", and

"a computer processor programmed with a computer program for making molecular binding measurements based on changes in the interference patterns monitored by the at least one interference monitor while analytes bind with and disassociate from ligands attached to surfaces of said pores."

Neither Chan nor Iwasaki or any of the other references or all of them taken together suggests the interference monitor adapted as claimed nor the computer processor programmed as claimed.

In his latest rejection Examiner refers to the fact that Applicants recited monitors configured to monitor Raman scattering. Applicants' reference to Raman methods clearly shows that Ramon methods are in a group of detection methods other than the ones described by Applicants. Applicants stated:

"Also various optical detection methods can be used other than the ones specifically described. For example, it is known that Raman spectroscopy is of considerable value in determining molecular structure and chemical analysis. Therefore, Raman spectroscopy techniques can be adapted for use with the porous silicon observation regions and micro fluidic sample control techniques of the present invention."

The optical detection methods claimed by Applicants are limited to methods

similar to the ones specifically described by Applicants; namely techniques based on interference patterns resulting from light reflecting from the top and bottom of porous silicon surfaces.

Claim 28 that referred to Raman scattering has been cancelled.

Conclusion

Since the present invention as claimed is not disclosed or suggested by the referenced prior art or, to the best of Applicants' knowledge, any other prior art, Applicants request that the outstanding claims (namely claims 1-5, 7-17, 21-26, 29-30 and 38-44 be allowed. Since generic claim 1 should be allowable for reasons given above, species claims 6, 18-20, and 27 that were withdrawn should also be allowable and Applicants request that they be allowed. So Applicants respectfully request, in accordance with Examiner's statements in his 6/15/2006 Office Action, that claims 1-30 and 38-44 be allowed and that the application be allowed to issue as a patent.

Respectfully submitted



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